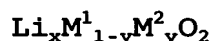


CLAIMS

1. A lithium secondary battery comprising: a positive electrode including a positive electrode active material; a negative electrode including a negative electrode active material; and a non-aqueous electrolyte,

wherein said positive electrode active material comprises at least one lithium-containing composite oxide represented by the following general formula:



where M^1 and M^2 are different elements, M^1 is Ni or Co, M^2 is at least one selected from Ni, Co, Mn, Mg, and Al, $1 \leq x \leq 1.05$, and $0 \leq y \leq 0.7$,

said negative electrode active material comprises at least one selected from the group consisting of silicon, tin, a silicon-containing alloy, and a tin-containing alloy, and

at least one of said positive electrode, said negative electrode, and said non-aqueous electrolyte includes an organic peroxide.

2. The lithium secondary battery in accordance with claim 1, wherein said organic peroxide is at least one selected from the group consisting of hydroperoxides, dialkylperoxides, peroxy esters, diacylperoxides, peroxyketals, and ketone peroxides.

3. The lithium secondary battery in accordance with claim 1, wherein said organic peroxide is included in said

non-aqueous electrolyte.

4. The lithium secondary battery in accordance with claim 3, wherein said organic peroxide accounts for 0.1 to 5 % by weight of said non-aqueous electrolyte.

5. The lithium secondary battery in accordance with claim 1 or 3, wherein said organic peroxide is included in said negative electrode.

6. The lithium secondary battery in accordance with claim 1, wherein said negative electrode active material comprises a silicon-containing alloy.

7. The lithium secondary battery in accordance with claim 6, wherein said silicon-containing alloy comprises: a solid solution including silicon and at least one transition metal element selected from the group consisting of Ti, Ni, Co, Fe, and Cu; or an alloy including silicon and at least one intermetallic compound selected from the group consisting of TiSi_2 , TiSi , CoSi_2 , CoSi , FeSi_2 , FeSi , NiSi_2 , NiSi , and Cu_3Si .

8. The lithium secondary battery in accordance with claim 7, wherein said intermetallic compound is TiSi_2 .